

**IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA**

**OAKLAND DIVISION**

EPIC GAMES, INC.,	)	
	)	Case No. 4:20-CV-05640-YGR
	)	
Plaintiff,	)	
	)	Date: September 28, 2020
v.	)	
	)	Courtroom: 5, 17th Floor
APPLE INC.,	)	
	)	Judge: Hon. Yvonne Gonzalez
	)	Rogers
Defendant.	)	
	)	

**Second Declaration of Dr. David S. Evans**

**September 18, 2020**

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## **I. Introduction**

1. My name is David S. Evans and I previously submitted a declaration stating my preliminary findings regarding relevant antitrust markets and market power.<sup>1</sup> This declaration responds to certain key aspects of declarations, submitted on behalf of Apple, by Professors Richard Schmalensee<sup>2</sup> and Lorin Hitt.<sup>3</sup> Given the constrained time I had to review their declarations, my declaration is not intended to provide a complete response to these declarations, and the fact that I do not address particular economic theories or empirical evidence asserted by Professor Schmalensee or Professor Hitt does not mean that I agree with them.<sup>4</sup> The following is a brief summary of my findings.

### **A. Summary of Responses to Professor Schmalensee**

2. Professor Schmalensee essentially assumes his conclusion that the mandated use of Apple's IAP check-out method for in-app payments is not a tie. He does so by asserting that the transactions that flow through Apple's check-out method are provided by a two-sided transaction platform. In the absence of the tie, however, those transactions could have taken place between the developer and its customer, just like many other transactions between app developers and users that are not subject to the tie. He has therefore relabeled transactions caused by the tie as two-sided transactions, which does nothing to disprove the tie. Likewise, labelling Apple's IAP payment processing method an "input" or a "component" in a two-sided transaction does not eliminate the need to analyze whether payment processing is a separate product.

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<sup>1</sup> Declaration of Dr. David S. Evans, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 62 (September 4, 2020) ("Evans Declaration").

<sup>2</sup> Expert Declaration of Richard Schmalensee, Ph.D., *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 78 (September 15, 2020) ("Schmalensee Declaration").

<sup>3</sup> Declaration of Lorin M. Hitt, Ph.D., *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 77 (September 15, 2020) ("Hitt Declaration").

<sup>4</sup> The opinions expressed in this declaration are based on information available to me at this time. My work in this matter is ongoing and I reserve the right to revise or supplement my opinion if any additional information makes that appropriate, or to correct any inadvertent errors.

3. Professor Schmalensee assumes that the App Store practices are analogous to American Express's practices, which are nothing like the practices at issue in this case.<sup>5</sup> In the case of the App Store, Apple imposes a perpetual obligation on the developer, whose app has already been distributed to a consumer for use on an iOS device, to use Apple's IAP payment processing solution to process all direct transactions between the developer and the consumer. By contrast, American Express does not require that the store use its payment network for all future direct transactions between the store and a customer who paid for a purchase using her American Express card. Nor does American Express require that the store use a separate product, such as a payment terminal, for which there is material separate demand; stores use third-party payment terminals that accept many different payment methods. Comparing the App Store to American Express glosses over and obscures the key issue for analyzing Apple's IAP requirements: that the relevant transactions are between the developer and the consumer independent of the store.

4. While much of Professor Schmalensee's declaration refers to the App Store, his analysis frequently conflates what are (absent a tie) three separate products: the iOS software platform, the App Store, and the mandatory use of IAP after an app has been distributed. This results in error because, for example, he credits the App Store and IAP with efficiencies that result from the iOS software platform and assumes that IAP-related transactions take place on the App Store, when in fact they occur (or could occur, but for the tie) directly between app user and app developer using the iOS software platform.

## **B. Summary of Responses to Professor Hitt**

5. To begin with, Professor Hitt has not attempted to refute the evidence in my opening declaration concerning the differences between smartphones and other devices, which led me to conclude that smartphone software platforms comprise a relevant antitrust market. He has also not attempted, aside from the minor exception discussed below, to refute the evidence I put forward on switching costs from iOS to Android, which led me to conclude that Apple has substantial monopoly power in the relevant market for smartphone software platforms. Those conclusions were the foundation for my subsequent finding concerning Apple's monopoly power over iOS app distribution.

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<sup>5</sup> Schmalensee Declaration at ¶¶ 17-22, 32, 39, 53, 64.

6. Among the key flaws in Professor Hitt's analysis are the following:
7. Professor Hitt concludes that there is a relevant antitrust market, covering all digital apps provided by numerous developers, that includes personal computers, handheld gaming devices, gaming consoles, all non-iOS handheld devices (Android smartphones and tablets and Microsoft Surface tablets), and streaming game platforms, and may include other web gaming platforms. That finding, however, is based only on analyzing gaming apps (a subset of Apple's claimed market), for one customer (Epic), and for one product (Fortnite). His analysis is not capable of establishing the boundaries of his claimed relevant antitrust market, because he hasn't investigated that market, and his analysis is not consistent with how industrial organization economists, or competition authorities, determine the boundaries of relevant antitrust markets.
8. Professor Hitt does not deploy any standard methodologies of market definition analysis to assess whether it would be profitable for a hypothetical monopolist to raise prices on of any set of products smaller than the expansive group he has put forward. He has just claimed that these are "good substitutes"—for Epic, for Fortnite—without any further consideration of whether a hypothetical monopolist of a smaller group of substitutes, including the ones I've proposed, would be able to impose a small but significant non-transitory price (SSNIP) increase on the customers in the putative market. His main response to my analysis of switching costs is that some of them may reflect value Apple provides to consumers. Of course, one of the reasons companies have market power is there are not good substitutes for their products.
9. Professor Hitt wrongly concludes that, because some consumers can use different platforms to play games, those platforms could constrain Apple's exercise of market power. That is equivalent to concluding that, because a consumer uses several different modes of transportation, those choices necessarily constrain a hypothetical monopolist of one of those modes of transportation. It is like saying that, because people in San Francisco sometimes walk and sometimes take an Uber, it wouldn't be possible to have a hypothetical monopolist of ride-sharing companies.

## **II. Professor Schmalensee's Two-Sided Transaction Platform Analysis**

10. To explain the problems with the analysis put forward by Professor Schmalensee, consider the following hypothetical conduct by Microsoft involving Windows. I will keep coming back to this hypothetical throughout this section of my declaration to highlight flaws in his reasoning.

11. Windows is a software platform for personal computers. Like other software platforms, it charges developers little. Instead, Microsoft makes money by licensing Windows to OEMs who install it on devices for consumers. Today, Windows is installed on about 80 percent of personal computers worldwide.<sup>6</sup> Developers have created more than 35 million apps for Windows, such as Salesforce and TurboTax.<sup>7</sup>

12. In the actual world that exists today, a developer distributes an application to a Windows user and can rely on a variety of channels to do so. There may be a direct, ongoing customer relationship between the user, who acquired the application and a license to use it on her Windows computer, and the application developer. In some cases, the developer may offer products and services in the application that the consumer can purchase. Those transactions take place using an application that runs on the Windows software platform. For example, when a consumer buys Intuit's TurboTax Windows application from Amazon and uses TurboTax to complete her tax return, TurboTax makes an offer in the TurboTax application to e-file her state return for her for a fee. If she takes that offer, the payment of the e-filing fee takes place directly between the consumer and TurboTax, using the check-out process offered by TurboTax (Intuit), not that operated by Amazon, or by Microsoft.<sup>8</sup>

13. Now, consider Microsoft engaging in two sequential steps.

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<sup>6</sup> Statcounter and NetMarketShare report estimates of the market share of personal computer operating systems based on visits to websites tracked by the respective firms. The estimated Windows average share for the twelve months ending August 2020 was 78 percent based on Statcounter and 88 percent based on NetMarketShare. See Statcounter, "Desktop Operating System Market Share Worldwide," <https://gs.statcounter.com/os-market-share/desktop/worldwide/>; NetMarketShare, "Desktop/laptop Operating System Market Share," <https://netmarketshare.com/operating-system-market-share.aspx>.

<sup>7</sup> Mike Fortin, "Windows 10 Quality approach for a complex ecosystem," Microsoft, November 13, 2018, <https://blogs.windows.com/windowsexperience/2018/11/13/windows-10-quality-approach-for-a-complex-ecosystem>.

<sup>8</sup> The facts in this discussion were confirmed by purchases made by staff working under my direction.

14. Step 1: Creation of Application Distribution Monopoly. Under my hypothetical, Microsoft adopts a policy that requires all application developers who want access to the APIs for the Windows platform to distribute their applications through the Windows Store, and prohibits developers from distributing applications to users in any other way. At first, the Windows Store operates like any other store. Developers, who already have permission to access the Windows APIs, put their applications on the store “shelves”, and users can purchase them. As before, there is still a direct customer relationship between the developer and the application user. Any subsequent transactions involving that application continue to take place over the Windows software platform. The Windows Store is not involved in these subsequent transactions and only acted to initially distribute the applications.

15. Step 2: Mandated Use of Store Check-Out for In-Application Transactions. Now, under my hypothetical, Microsoft adopts another policy. Microsoft requires that developers pay the Windows Store a commission not only on all initial purchases of applications from the store, but also on all subsequent direct purchases made by the application customer from the application developer within that application, in perpetuity, such as the TurboTax purchase mentioned above.

16. To enforce this policy, Microsoft requires that developers always use a check-out method it provides. That results in the Windows Store collecting the money directly from the customer and then paying the developer this amount less the store’s commission. These transactions can be said to take place on the Windows Store only in the sense that Microsoft has required that developers use the store’s check-out method. Before the policy was put in place, these transactions took place directly between the user and developer, both of whom used the Windows software platform but not the Windows Store.

17. This hypothetical, which essentially maps the steps Microsoft would have to take to replicate the iOS ecosystem in important aspects relevant here, illustrates three fundamental flaws in Professor Schmalensee’s analysis.<sup>9</sup>

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<sup>9</sup> While there may be other differences between the Windows hypothetical and the Apple practices at issue in this case, any such differences would not affect my basic conclusion that Professor Schmalensee’s methodology is flawed in the ways described below.

18. *First*, when applied to the Microsoft hypothetical, his analysis assumes away the tie by claiming that direct transactions that took place on the Windows platform between the user of an application and the developer of the application are Windows Store transactions simply because Microsoft has required the use of its check-out method to process them. He does so by recasting the requirement that developers use the check-out process—for transactions that, but-for the tie, would have been direct transactions between the application user and the application developer—as a set of store transactions. These can only be viewed as store transactions, however, because they are the subject of the tie at issue; otherwise, they wouldn’t have anything to do with the store.

19. When applied to the Microsoft hypothetical, Professor Schmalensee’s methodology essentially applies the label “two-sided transaction platform” to the transactions that result from Microsoft’s requirement that developers who want to use its monopoly store to distribute their applications (the tying product) also use its check-out method (the tied product) for subsequent direct transactions between themselves and customers who use their applications. He would then prematurely end the analysis of the conduct at issue by claiming that the check-out method is just the way to charge for these transactions.

20. In fact, as I discuss below in Section II.A, his analysis in this matter improperly ends the inquiry into Apple’s requirement to use its IAP payment method for direct transactions between developers and users of iOS apps by labelling the result of this tie a two-sided transaction platform.

21. *Second*, the Windows example shows why, contrary to Professor Schmalensee’s claims, the App Store isn’t analogous to American Express when it comes to the tying conduct at issue in this case. Going back to my hypothetical, in Step 1 Microsoft establishes a store that distributes applications but doesn’t impose any further requirements. The developer puts an application on the shelf and the consumer procures the application. The developer and user don’t have any further interaction with the store.

22. With respect to American Express, the Amex cardholder walks into the Amex-accepting retailer and pays the retailer with her card, and American Express charges the merchant a fee



for that transaction in the course of providing payment processing.<sup>10</sup> At that point, American Express is done. Moreover, American Express is not requiring that the retailer use any other separate product, such as an American Express-supplied payment card terminal, as a condition of processing that transaction or any future ones. The retailer gets a payment card terminal, which can process many types of payment cards, including American Express, from a third party.

23. In Step 2 of my hypothetical, Microsoft imposes a perpetual obligation on the developer to use the Window Store's check-out method for all direct transactions that take place between the user and developer involving that application. That is not like American Express, which imposes no requirement that its payment card network be used for subsequent transactions between the Amex merchant and Amex cardholder. And American Express doesn't require that the retailer use a product for which there is material separate demand, such as an independently-supplied payment terminal, for any transaction.

24. For the tying conduct at issue in this matter, it is the second step in the hypothetical that matters. And at that stage, the App Store is not at all like American Express.

25. *Third*, the Windows example shows the mistake in asserting, as Professor Schmalensee does for Apple, that the conduct at issue is necessary for a "monetization strategy." In my hypothetical, Microsoft would certainly have a monetization strategy in mind for monopolizing application distribution and requiring developers to use its check-out method for direct transactions they have with application users. There is no *a priori* basis for economists to assume that this monetization strategy, resulting from the successive application of Step 1 and Step 2, is procompetitive or necessary to finance Microsoft's investments in the platform.<sup>11</sup> Indeed, if Microsoft were to engage in the hypothetical conduct described above, it is likely that competition authorities, and industrial organization economists, would find it quite alarming.

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<sup>10</sup> *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018).

<sup>11</sup> Professor Schmalensee might argue that Apple is different because it had the policy in place at the beginning. But there is also no presumption that conduct that was not anticompetitive when it was adopted by a firm that lacks substantial market power couldn't become anticompetitive when that firm acquires market power.

26. With this Microsoft Windows hypothetical in mind, I will turn to a discussion of some key areas where I disagree with Professor Schmalensee's analysis.

**A. Professor Schmalensee's Conclusion that the App Store Is a Two-Sided Transaction Platform Conflates the iOS Platform with the App Store and Assumes that the App Store Can Tie Distribution with Direct Transactions Between Apps Users and Developers.**

27. Professor Schmalensee claims that the App Store is a two-sided transaction platform. By that, he means that the App Store is a two-sided transaction platform *for direct transactions between iOS users, who have an app that they can use under the license on their iPhone, and iOS developers, who have developed an app that can work under that license*. His analysis is presented in paragraphs 39-45. I comment on each major step of his analysis.

28. In paragraph 39, he points out that I have not offered an opinion on whether the App Store is a two-sided transaction platform.<sup>12</sup> I'm not going to offer one here as I believe the issue is more complex than Professor Schmalensee suggests. To begin with, stores may operate under a retail model, which is considered single-sided, and a marketplace model, which is considered two-sided.<sup>13</sup> Amazon, for example, operates a hybrid: Amazon Marketplace, which connects buyers and sellers, is a two-sided marketplace; but Amazon also operates a large retail store, which isn't. Unlike payment card platforms, which mainly compete with each other, it is common for two-sided marketplaces to compete with retail stores. Retail stores do not necessarily have to have substantial indirect network effects. They can just specialize in carrying certain products. And as I noted in my earlier declaration, and as explained further below, at least at this stage, I don't think the issues in this case turn on this definitional issue.

29. But here's the critical flaw in Professor Schmalensee's analysis: the transaction platform label is being applied to a set of transactions that are taking place *directly* between users and developers using the iOS platform. Those transactions have to take place over a two-sided transaction platform involving the App Store only because Apple has imposed a

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<sup>12</sup> Schmalensee Declaration at ¶ 39.

<sup>13</sup> Evans, David S. and Richard Schmalensee (2016), *Matchmakers: The New Economics of Multisided Platforms*, Harvard Business School Press, at pp. 104-109; Hagiu, Andrei (2007), "Merchant or Two-Sided Platform?" *Review of Network Economics* 6(2), pp. 115-133; Hagiu, Andrei and Jullian Wright (2015), "Marketplace or Reseller?" *Management Science* 61(1), pp. 184-203.

requirement—the tie at issue in this case—that they do so. That is unlike two-sided transactions platforms that arise because both sides, such as merchants and cardholders, choose to use that platform. This flaw is apparent in Professor Schmalensee’s analysis in the remaining paragraphs that he provides as support for his conclusion.

30. In paragraph 40, Professor Schmalensee says that the “App Store exhibits all the hallmarks of a two-sided platform”<sup>14</sup> and in paragraph 41, he says there are “clear indirect network effects: consumers want access to good apps, developers want access to many potential customers.”<sup>15</sup> But in both paragraphs, much of the evidence cited in support is based on the *iOS platform* providing software that enables developers to provide, and consumers to use, apps.<sup>16</sup> This evidence offered is not different than what one could provide for the Windows software platform, which in fact, and contrary to my hypothetical above, did not operate an app store as a central part of its business model.

31. In paragraph 43, Professor Schmalensee concludes “[a]s is common for two-sided platforms, the App Store earns all of its revenues from one side: developers.”<sup>17</sup> Apple’s monetization strategy, which results from its making the App Store the exclusive channel for app distribution and its requirement to use IAP for in-app transactions, is hardly a developer-pays model. First, developers that account for the preponderance of transactions within apps—developers selling physical goods and services and developers monetizing via advertising—

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<sup>14</sup> Schmalensee Declaration at ¶ 40.

<sup>15</sup> Schmalensee Declaration at ¶ 41.

<sup>16</sup> The only factual support cited in these two paragraphs comes from Apple’s SEC Form 10-K for the Fiscal Year Ended September 29, 2018. Passages analogous to the ones quoted by Professor Schmalensee do not appear in Apple’s SEC Form 10-K for Fiscal Year Ended September 28, 2019 (its most recent 10-K). *Compare* Apple, SEC Form 10-K for the Fiscal Year Ended September 29, 2018, Item 1, *with* Apple, SEC Form 10-K for the Fiscal Year Ended September 28, 2019, Item 1. While the quoted passages do mention app distribution, the focus is on support for software development. These passages discuss the ways Apple supports the developer community, including access to beta software, advanced app capabilities, and testing software, as well as code-level technical support. The quotations also tout Xcode, Apple’s integrated development environment, which “includes project management tools; analysis tools to collect, display and compare app performance data; simulation tools to locally run, test and debug apps; and tools to simplify the design and development of user interfaces.” Apple, SEC Form 10-K for the Fiscal Year Ended September 29, 2018, pp. 1-3. All of these activities refer to Apple’s efforts to promote its iOS software platform, not its iOS App Store.

<sup>17</sup> Schmalensee Declaration at ¶ 43.

pay only nominal fees.<sup>18</sup> Second, IAP applies to direct transactions between a developer and a consumer. Generally, economists would expect that the developer would pass on some portion of the commission to the consumer in the form of higher prices.<sup>19</sup> Overall, Apple's monetization strategy for the iOS platform and App Store is heavily skewed towards the consumer paying, especially given that most of Apple's revenues come from sales of devices.<sup>20</sup>

32. In paragraph 44, Professor Schmalensee asserts that it is essential to decide whether the App Store is a two-sided platform.<sup>21</sup> He says the use of IAP for direct transactions between the app owner and developer is simply a feature of the transaction platform. But that substitutes a label—two-sided transaction platform—for a substantive analysis of whether the requirement to use the IAP check-out, which imposes the fees for these transactions, is a tie. It is not different than, in my Windows hypothetical, taking a set of transactions that occurred directly between application users and developers using the Windows platform before the Step 2 tie, and saying those transactions take place on a two-sided transaction platform after the Step 2 tie is in place.

33. The economic reasoning related to the Supreme Court's decision in *American Express* summarized in paragraph 45 doesn't support his conclusion.<sup>22</sup> American Express is a two-sided transaction platform that charges a merchant a fee for a transaction that takes place over the American Express payment network as a result of a cardholder paying the merchant with her American Express card.<sup>23</sup> IAP is a mechanism imposed on developers and that charges developers a fee for a transaction that takes place directly between them, using the iOS

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<sup>18</sup> According to a study commissioned by Apple, ad-supported app developers earned \$45 billion for iOS apps in 2019. Physical apps accounted for \$413 billion in transactions. These apps didn't pay Apple anything. *See* Borck, Jonathan, Juliette Caminade, and Markus von Wartburg, "How Large Is the Apple App Store Ecosystem?" Analysis Group, June 15, 2020, at p. 2-3, <https://www.apple.com/newsroom/pdfs/app-store-study-2019.pdf>

<sup>19</sup> Further analysis of the extent of this standard pass-through issue would be needed to determine the extent to which the consumer and developer bear the burden of the commission.

<sup>20</sup> In 2019, Apple had \$146.4 billion in iPhone sales and \$20.5 billion in iPad sales, for a total of \$166.9 billion. Apple's App Store revenues in 2019 were approximately \$16.6 billion. Thus, approximately 91 percent ( $166.9/(166.9+16.6)$ ) of Apple's iOS related revenues come from selling iPhones and iPads. *See* Evans Declaration at ¶ 19.

<sup>21</sup> Schmalensee Declaration at ¶ 44.

<sup>22</sup> Schmalensee Declaration at ¶ 45.

<sup>23</sup> *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018).

software platform, but outside the App Store. That transaction can be said to take place over the App Store only as a result of the tie.

34. As I showed in my first declaration, and in Section II.D below, when a direct in-app transaction between an iOS app developer and an iOS app user that is not subject to Apple's requirement to use its IAP payment processing method, the transaction does not take place over Professor Schmalensee's "two-sided transaction platform." It takes place directly between the developer and user relying on whatever payment processing method the developer chooses.

### **B. Calling the IAP App Administration Does Not Mean There Is No Tie**

35. Professor Schmalensee claims that the "IAP system collects a commission on paid apps and in-app sales that is the core of Apple's strategy for capturing some of the value that the App Store creates."<sup>24</sup> That assertion doesn't address the tying allegation; it simply re-labels it conveniently. Going back to my Windows hypothetical, Microsoft could claim that requiring application developers to use the Windows Store check-out method is core to its strategy for monetizing the Windows Store. Moreover, a defendant can always claim, sometimes correctly, that a tie is core to its business model. That assertion does not transform a tie into something else.

36. It is also not correct that the "IAP system no more provides transaction processing than the payment card terminal at the grocery store."<sup>25</sup> The IAP system, which uses a payment processor, charges the consumer, processes the payment, and deposits the net receipts in the developer's bank account.<sup>26</sup> The developer can provide all of these services itself by having the consumer provide payment credentials and using its own payment processing solutions.<sup>27</sup> I provide further evidence on this point in Section II.D below.

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<sup>24</sup> Schmalensee Declaration at ¶ 50.

<sup>25</sup> Schmalensee Declaration at ¶ 49.

<sup>26</sup> In paragraph 29, Professor Schmalensee claims that "IAP is not a payment settlement platform" because "Apple outsources payment settlement to third-party providers." This distinction is irrelevant; regardless of whether payment processing is integrated or outsourced, IAP is the means by which developers that offer in-app purchases of in-app content are required to process those transactions.

<sup>27</sup> At various points, Professor Schmalensee refers to Mastercard and Visa as payment processors. Their main businesses that are usually referred to by these brand names aren't. Visa and Mastercard are payment card networks that have affiliated issuers from whom consumers get card credentials. Payment processors are

37. I disagree with Professor Schmalensee's claim that "Plaintiff's tying analysis is vacuous" because "Apple does not require that developers offer any in-app purchases of digital content."<sup>28</sup> A purchaser of a tying and tied product generally doesn't have to buy the two products at all. The problem with tying stems from situations in which the seller of the tying product has the ability to force the purchaser to take the tied product because their customers want the tying product and don't have an alternative. The fact that the app developer might be able to develop a different app employing a different business model does not change the fact that for the universe of apps that do sell digital upgrades and other content, Apple employs a tie.<sup>29</sup>

38. I understand that Professor Schmalensee, and Apple, contend that developers are required to pay the 30 percent commission to Apple regardless of whether it is collected through IAP.<sup>30</sup> The requirement to use IAP for in-app purchases could still be a tie even under that assumption. Shopping malls, for example, typically require that stores pay a percent of their revenue in addition to rent. Presumably, the shopping mall and the stores have developed a process to collect and audit these amounts. Malls do not install their own cash registers, connected to their payment processors, in the stores they rent to. Of course, if they did, that would be a tie, since cash registers and payment processing are generally procured by stores separately.<sup>31</sup>

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companies like Braintree that take those card credentials and collect money from those issuers, which then bill the consumers.

<sup>28</sup> Schmalensee Declaration at ¶ 46.

<sup>29</sup> Professor Schmalensee himself observes that there are material differences in the suitability of different business models for an app developer. He finds that Epic's use of what he calls the "Freemium" model, with no upfront app fee and with the option of in-app purchases, has allowed Fortnite to be more successful. He states that "[b]y drawing in both more price-sensitive and less price-sensitive consumers, it allows a platform like Fortnite to maximize its user base, which is important"; "this model still allows Epic to cash in on its most enthusiastic and hence potentially less price-sensitive users"; and "[t]he Freemium Model hence provides a convenient method for Epic to earn more revenue from more avid players, thereby likely contributing to Fortnite's overall profitability". See Schmalensee Declaration at ¶¶ 65, 67.

<sup>30</sup> Schmalensee Declaration at ¶ 54.

<sup>31</sup> Whether this practice would meet the legal definition of a tie would further depend on whether a mall had significant market power.

**C. Calling a Product an Input into a Transaction, or a Component, Does Not Mean There Is No Separate Material Demand for that Product and Does Not End the Antitrust Analysis**

39. In paragraph 53, Professor Schmalensee claims that “it makes no economic sense to consider inputs into transactions production that are simultaneously engaged in fixed proportions as actually or potentially separate products.”<sup>32</sup> He appears to be saying that if a product can be characterized as an input into a transaction, then it is not a separate product. I do not believe this is correct.

40. Instead, as economists would do for any tying claim, we would have to examine whether a product that is characterized as an input into a transaction is provided separately from the transaction. Suppose American Express, for example, required that stores that accepted its cards also use an Amex-supplied payment terminal and American Express charged a separate fee for each transaction that went through its terminal.<sup>33</sup> The payment card terminal is an input into the transactions American Express provides and its services are provided in fixed proportions with these transactions.

41. To analyze whether this conduct constitutes a tie, we would need to examine whether there is separate demand for payment terminals. In the actual world, retailers don’t get their payment terminals from American Express, and we know from common experience that payment terminals typically take payment cards from most major networks.

42. The same economic analysis applies to the products at issue in this case. We consider whether we observe demand for payment processing of in-app purchases that is separate from demand for app store services. As I discuss in Section II.D below, we observe separate demand for in-app payment processing on the part of developers and users. We also observe it being provided separately from app stores by third parties. This means that it is a separate product

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<sup>32</sup> Schmalensee Declaration at ¶ 53.

<sup>33</sup> To take another example, consider cash register tape that the clerk gives the customer as a record of the transaction. Cash register tape can be characterized as an input into each transaction because it is used with each transaction and it is used in fixed proportion to the number of transactions. But, again, we still need to ask whether we observe demand for cash register tape that is separate from the demand for transaction services. If we observe that demand, then cash register tape is a separate product even if it could be characterized as an input into the transaction.



from the app store, whether or not one would characterize it as an input into app store services.<sup>34</sup>

43. Citing *American Express*, and referring to two-sided transactions between consumers and merchants, does not get around having to do the separate products analysis.<sup>35</sup> If it did, a two-sided transaction platform could tie anything in fixed proportions to a transaction and insist that it is just part of the platform. In my example above, American Express could claim the payment card terminals, and the associated fee structure, are just components of the transaction. Under Professor Schmalensee's approach, that ends the antitrust analysis. I don't believe anything in our amicus brief to the Supreme Court dictates that conclusion.

**D. Professor Schmalensee Does Not Dispute Evidence That There Is Material Demand by Developers and Consumers To Use Payment Processing Methods Other Than Those Provided by the Platform**

44. Professor Schmalensee does not dispute the evidence I put forward in my opening declaration that there is separate demand from iOS developers for payment processing methods other than those provided by the platform.<sup>36</sup> That same evidence shows that, in the absence of a tie, developers do not use the "two-sided transaction platform" described by Professor Schmalensee in the discussion above. These developers use their own check-out methods involving payment processors they choose to work with. The following summarizes and supplements that evidence.

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<sup>34</sup> As I discussed above, in-app purchases are in fact unrelated to App Store services as they are removed both in location (they take place in the developer app, not in the app store) and time (they take place after the app has been distributed) from the App Store. So, in-app purchase processing is not an input into App Store services.

<sup>35</sup> Professor Schmalensee also makes the assertion in paragraph 45 that "Epic seeks to separate the distribution of apps and in-app content from the management of those transactions by the App Store." As explained in this declaration, the separate products inquiry does not concern the separation of the management of transactions from the transactions themselves. Rather, the inquiry is concerned with two different types of transactions: (1) the distribution of apps and (2) the sale of in-app content. (To be more precise, the inquiry is concerned with Apple's requirement that the App Store process the sale of in-app content, because the developer is already otherwise responsible for offering the content to the user in the developer's app.) Professor Schmalensee's description in paragraph 45 makes separate reference to "the distribution of apps" and "in-app content"—they are two discrete types of transactions. The relevant separate products inquiry is then whether there is separate demand for these two types of transactions. As I explain in this declaration, there is.

<sup>36</sup> Evans Declaration at Section III.B.



45. First, we know that developers, including Epic, Match Group<sup>37</sup>, Facebook<sup>38</sup>, Spotify<sup>39</sup>, and Hey<sup>40</sup>, would like to have the option of using a check-out method, and payment processing solution, that is not provided by Apple's iOS App Store. We further know that when Epic offered iOS users of Fortnite the choice between IAP and Epic Direct Pay, customers utilized Epic Direct Pay for 73 percent of transactions.<sup>41</sup>

46. Second, Apple's iOS App Store and the Google Play Store generally allow developers to use their own payment processing method for in-app purchases of physical goods or services that are consumed outside the app.<sup>42</sup> Those developers and their customers use those other methods. The fact that Apple has reasons for not wanting to require these apps to use its payment processing method does not show the absence of separate demand.

47. Third, Apple itself has made business decisions to allow developers to use their own payment processing for certain digital content that is consumed in the app. The developers then use check-out methods using their chosen payment processors. There is, again, material

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<sup>37</sup> S&P Capital IQ, "Match Group, Inc. NasdaqGS:MTCH FQ2 2019 Earnings Call Transcripts," August 7, 2019 at pp. 6, 11 ("[W]e introduced a credit card payment option on the Android app at Tinder in Q2. . . . To roll this out, we first had to build a web-based payment infrastructure to be able to accept credit card payments. . . . We'd love to offer the same kind of choice on Apple as we do with Google, but it's not clear to us if or when that's actually going to be able to happen.")

<sup>38</sup> Salvador Rodriguez, "Facebook says Apple refused to waive 30% fee on new paid online events feature," CNBC, August 14, 2020, <https://www.cnbc.com/2020/08/14/facebook-says-apple-refused-to-waive-30percent-fee-on-new-feature.html> ("We asked Apple to . . . allow us to offer Facebook Pay[.]").

<sup>39</sup> Daniel Ek, "Consumers and Innovators Win on a Level Playing Field," Spotify Newsroom, March 13, 2019, <https://newsroom.spotify.com/2019-03-13/consumers-and-innovators-win-on-a-level-playing-field> ("[C]onsumers should have a real choice of payment systems, and not be 'locked in' or forced to use systems with discriminatory tariffs such as Apple's.").

<sup>40</sup> Jason Fried, "Our CEO's take on Apple's App Store payment policies, and their impact on our relationship with our customers," HEY, June 19, 2020, <https://hey.com/apple/iap/> ("Apple, please just give your developers the choice! Let us bill our own customers through our own systems, so we can help them with extensions, refunds, discounts, or whatever else *our own way*.").

<sup>41</sup> From the start of the Direct Pay option being offered (August 13) to the point when the Apple IAP option was no longer available because Epic's developer account ending in '84 was terminated by Apple (midday August 28), about 73 percent of purchases were on Epic Direct Pay. Calculations based on data from Epic.

<sup>42</sup> Apple, "App Store Review Guidelines," at 3.1.3(e), <https://developer.apple.com/app-store/review/guidelines/> ("Goods and Services Outside of the App: If your app enables people to purchase physical goods or services that will be consumed outside of the app, you must use purchase methods other than in-app purchase to collect those payments, such as Apple Pay or traditional credit card entry."); Google, "Play Console Help, Policy Center, Payments," <https://support.google.com/googleplay/android-developer/answer/9858738> ("Developers offering products within another category of app downloaded on Google Play must use Google Play In-app Billing as the method of payment, except for the following cases: Payment is solely for physical products").

demand for payment processing not provided by the App Store as a separate product. Apple allows developers to use their own payment processing, which customers use, in the following cases:

- a. For Amazon Prime Video and other “qualifying premium video entertainment apps”, users “have the option to buy or rent movies and TV shows using the payment method tied to their existing video subscription.”<sup>43</sup>
- b. For tips given to creators of in-app content, which is commonly done in China.<sup>44</sup>
- c. For person-to-person content, such as an exercise class, when it is one-to-one (but not when it is one-to-two+).<sup>45</sup>
- d. For content consumed in the app but purchased outside of the app (e.g., developer’s website).<sup>46</sup>

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<sup>43</sup> Nick Statt, “Apple now lets some video streaming apps bypass the App Store cut,” The Verge, April 1, 2020, <https://www.theverge.com/2020/4/1/21203630/apple-amazon-prime-video-ios-app-store-cut-exempt-program-deal>; see also Nicole Nguyen, “How App Makers Break Their Apps to Avoid Paying Apple,” The Wall Street Journal, June 28, 2020, <https://www.wsj.com/articles/how-app-makers-break-their-apps-to-avoid-paying-apple-11593349200>.

<sup>44</sup> Apple, “App Store Review Guidelines,” at 3.2.1(vii), <https://developer.apple.com/app-store/review/guidelines/> (“Apps may enable individual users to give a monetary gift to another individual without using in-app purchase, provided that (a) the gift is a completely optional choice by the giver, and (b) 100% of the funds go to the receiver of the gift. However, a gift that is connected to or associated at any point in time with receiving digital content or services must use in-app purchase.”); Josh Horwitz, “Thanks to China, Apple has updated its app store policy to allow tipping,” Quartz, September 15, 2017, <https://qz.com/1078374/thanks-to-china-and-tencent-hkg-0700-apple-has-updated-its-app-store-policy-to-allow-tipping/> (“A recent update to the company’s global App Store Guidelines shows that Apple now permits users to send monetary tips to one another—a practice which, while widespread in China, the company had previously shown ambivalence towards. The revision shows that Apple is now accommodating China’s vast tip economy, and also highlights the power that Chinese social media giant Tencent has over China’s internet culture, as well as the foreign companies that operate in the country.”). Apple’s guidelines allow such payments but note that “a gift that is connected to or associated at any point in time with receiving digital content or services must use in-app purchase.” See Apple, “App Store Review Guidelines,” at 3.2.1(vii), <https://developer.apple.com/app-store/review/guidelines/>. The use of tipping in China that Apple allows to bypass its IAP payment processing has been characterized as “monetary gifts to [users’] favorite video-streaming stars and content creators” that are intended “as a means to build engagement” between content providers and users. They appear to be payments by users, in appreciation for content from providers, that is made on a voluntary rather than mandatory basis. See Yoko Kubota and Alyssa Abkowitz “Apple and Tencent Reach Deal to Let WeChat Users Dole Out Tips” The Wall Street Journal, January 15, 2018, <https://www.wsj.com/articles/apple-and-tencent-reach-deal-to-let-wechat-users-dole-out-tips-1516018849>.

<sup>45</sup> Apple, “App Store Review Guidelines,” at 3.1.3(d), <https://developer.apple.com/app-store/review/guidelines/> (“Person-to-Person Experiences: If your app enables the purchase of realtime person-to-person experiences between two individuals (for example tutoring students, medical consultations, real estate tours, or fitness training), you may use purchase methods other than in-app purchase to collect those payments. One-to-few and one-to-many realtime experiences must use in-app purchase.”).

<sup>46</sup> Apple, “App Store Review Guidelines,” at 3.1.3(a-b) (“Apps may allow a user to access previously purchased content or content subscriptions (specifically: magazines, newspapers, books, audio, music, and video). Reader

- e. For apps that are “sold directly by [developers] to organizations or groups for their employees or students”. For these iOS apps that are not distributed through the App Store but which still rely on access to the iOS platform, Apple does not mandate the use of its App Store’s payment method.<sup>47</sup>

In all these cases, the transactions take place directly between the developer of the iOS app and its customer, the iOS app user, using payment processing alternatives chosen by the developer and offered to the consumer. It is no different than a retailer that sells products directly to its customers and allows customers to use various payment cards at the check-out lane using a payment processor of the retailer’s own choosing.

48. Fourth, many Android app stores do not require that digital content providers use the store’s check-out method, and its payment processor, for in-app purchases, and developers use these app stores and their own check-out methods with their choice of payment processor.

- a. Google Play Store does not require use of its check-out method for non-gaming digital content that may be consumed outside of the app.<sup>48</sup>
- b. Significant Android app stores in South Korea and India, as well as others that operate in the US and other countries, give developers the choice of using their own check-out methods.<sup>49</sup>

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apps may offer account creation for free tiers, and account management functionality for existing customers. . . . Apps that operate across multiple platforms may allow users to access content, subscriptions, or features they have acquired in your app on other platforms or your web site, including consumable items in multi-platform games, provided those items are also available as in-app purchases within the app.”).

<sup>47</sup> Apple, “App Store Review Guidelines” at 3.1.3(c), <https://developer.apple.com/app-store/review/guidelines/>.

<sup>48</sup> Google, “Play Console Help, Policy Center, Payments,” <https://support.google.com/googleplay/android-developer/answer/9858738>.

<sup>49</sup> ONE Store Developer, “Service Fee,” <https://dev.onestore.co.kr/devpoc/reference/view/ServiceFee> (“In case of use 3rd party payment without ONE store In-App SDK, the service fee is 5%”). GetJar, “GetJar – How It Works,” <https://www.getjar.com/how-it-works> (“GetJar is the first and one of the biggest open app stores and open mobile app markets in the world providing a free of charge distribution for all users. Same time [*sic*] it allows for developers to upload their apps and place them in to [*sic*] our app catalog free of charge. GetJar does not control any in-app monetization, therefore each developer is in full control of their assets.”); itch.io, “Creator FAQ,” <https://itch.io/docs/creators/faq> (“itch.io costs nothing to use. You are free to create pages and upload your content without ever having to pay anything. Advertisements will never be placed on any of your pages. You get to decide how much you want to support itch.io by choosing what percentage of your sales should go towards our operational costs and continued development of the platform. . . . itch.io supports two payout models depending on your needs: Direct to you, where each purchase is a transaction to your PayPal or Stripe account, and Collected by itch.io, paid later. You can pick which mode you want to use from the seller settings page on your account.”); itch.io, “Introducing Open Revenue Sharing,” March 4, 2015, <https://itch.io/updates/introducing-open-revenue-sharing> (“As the seller you decide what percentage itch.io gets from each transaction. From 0 to 100%, set the slider to what you think is fair.”); itch.io, “Accepting Payments and Getting Paid,”

**E. Saying That Requiring Developers To Use IAP for In-App Purchases Supports Apple's Investments Is No Different Than Saying that a Tie Generates Revenue and Therefore Supports Investment**

49. Professor Schmalensee says,

It is important to note, however, that IAP is not a payment settlement platform. In fact, Apple outsources payment settlement to third-party providers. Thus, the commission that Apple charges developers on in-app purchases is not a fee for payment processing, but rather a fee to support the services offered by the App Store and Apple's investment in the mobile platform.<sup>50</sup>

That may be the case for Apple, but for the developer, IAP provides the same payment processing services the developer would have obtained by using a payment processor like Braintree to process transactions based on card credentials the consumer enters into the app. It is the processing method that charges the consumer's card and deposits the funds to the merchant. Apple could claim that this helps support its investments in the mobile platform. But simply calling it a source of revenue does not, by itself, tell us whether the IAP checkout method is a separate product or whether the tying arrangement is economically efficient.

**F. The Analysis of Economic Efficiencies from Apple's Practices Conflates the App Store and the iOS Platform**

50. Once Apple decided to operate a software platform for users and developers, it had to provide a way for users to get apps on their phones. If it didn't, it would not have had a software platform and could not benefit from indirect network effects any more than Windows could benefit from indirect network effects if application users couldn't install applications.

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<https://itch.io/docs/creators/payments> (itch.io requires developers to use either Stripe or PayPal, but allows developers to use their own accounts and connections to the processors); SlideMe, "Developer Distribution Agreement (DDA)" <http://slideme.org/developers/dda> ("SlideME does not restrict developers from including third party In-App-Payments SDK's within their freemium applications, providing such SDK's will work for non-GMS devices too."). In-app purchases through credit card and PayPal is available on third-party Android app store Aptoide. See Sonia Sarha, "You can now pay using Local Payment Methods! (updated)," Aptoide Official Blog, May 14, 2020, <https://blog.aptoide.com/payment-methods/>. Staff under my direction confirmed that the credit card statement of an in-app credit card transaction through Aptoide listed the developer rather than Aptoide as the merchant associated with the transaction. See also Indus, "App Bazaar Developer Distribution Agreement," <http://www.indusos.com/app-bazaar-developer-distribution-agreement/> ("In order to charge a fee for your Products, you must have a valid payment account under a separate agreement with a payment processor.").

<sup>50</sup> Schmalensee Declaration at ¶ 29.

51. Many of the benefits of the iOS platform that Professor Schmalensee (and Professor Hitt) point to result from Apple’s decision to provide a smartphone software platform for apps and the resulting indirect network effects. Professors Schmalensee and Hitt do not show that these benefits depend on the App Store being the exclusive method of distribution or on the requirement that IAP be used for the in-app purchases. They therefore have not done any serious analysis that would support their expansive conclusions that “App Store business strategy has led to large procompetitive benefits”<sup>51</sup> or that the “[s]ervices offered by the App Store . . . have been essential to the iPhone ecosystem.”<sup>52</sup>

52. Professor Schmalensee and Professor Hitt also claim that the App Store guarantees users security, privacy, and a quality consumer experience. The App Store could provide those same benefits absent Apple’s requirement that developers use the App Store exclusively; if in fact the App Store provides all the benefits Apple claims, Apple should not be afraid to compete on the merits. Users and developers could use app stores that provide their preferred combination of features.

### **III. Professor Hitt’s Analysis of Market Definition and Market Power Is Fatally Flawed**

53. Professor Hitt has not followed standard accepted methods used by economists or competition authorities, in my experience, for assessing the contours of relevant antitrust markets. He proceeds as follows:

- i. First, he focuses on gaming and ignores other digital apps even though these apps are distributed in the same channels (such as to PC and Android users) that are included in the market proposed by Apple. He says, “Defining relevant antitrust markets in the present case therefore requires that one evaluates the options that Epic and other developers (the customers) have in distributing and monetizing Fortnite and other videogames.”<sup>53</sup>
- ii. Second, in examining substitution possibilities, he considers only one customer, Epic, and only one game from Epic, Fortnite.<sup>54</sup>

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<sup>51</sup> Hitt Declaration at ¶ 16.

<sup>52</sup> Schmalensee Declaration at ¶ 30.

<sup>53</sup> Hitt Declaration at ¶ 18.

<sup>54</sup> See fn. 61 below.

- iii. Third, he claims that for Epic's Fortnite game, the following distribution channels are good substitutes for Apple's iOS App Store: personal computers, handheld gaming devices, gaming consoles, all non-iOS handheld devices (Android smartphones and tablets and Microsoft Surface tablets), and streaming game platforms, and may include other web gaming platforms.<sup>55</sup>
- iv. Fourth, based on his proposed, purportedly good substitutes that he says are available to Epic, he concludes that the relevant antitrust market, which extends to all digital apps provided by numerous developers, includes all the channels listed in (iii).<sup>56</sup> The gaming channels he cites are obviously not relevant to non-gaming apps that are distributed through channels in his proposed relevant market.

At no point in his declaration does he consider the hypothetical monopolist test or any other standard approach for defining a relevant antitrust market.

**A. Professor Hitt Erroneously Focuses on Substitution Possibilities for Only a Single Customer, for a Single Product, Rather Than on a Marketwide Basis**

54. The relevant market that I described in my opening declaration was for the distribution of iOS apps,<sup>57</sup> which is not restricted to game apps. Neither Professor Hitt nor Apple's counsel have proposed a relevant market for app distribution that is restricted to game apps, because other non-gaming apps are distributed via the same channels that are included in the market proposed by Apple.<sup>58</sup> Apple has stated that "Apple's commission structures, administered through the IAP, apply equally to all developers who offer in-app purchases on the App Store."<sup>59</sup> The conduct at issue in this matter therefore involves all those iOS app developers,

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<sup>55</sup> Hitt Declaration at ¶ 49.

<sup>56</sup> Hitt Declaration at ¶ 49.

<sup>57</sup> Evans Declaration at ¶¶ 52-57.

<sup>58</sup> Both Apple's counsel and Professor Hitt argue that the market should include at least the other platforms on which Epic distributes Fortnite. *See* Defendant Apple Inc.'s Opposition to Epic Games, Inc.'s Motion for a Preliminary Injunction, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 73 at p. 17 (September 15, 2020); Hitt Declaration at ¶ 14. Neither proposes a relevant market that is restricted to the distribution of games.

<sup>59</sup> Declaration of Philip W. Schiller in Support of Defendant Apple Inc.'s Opposition to Plaintiff's Motion for a Preliminary Injunction, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 74, at ¶ 62 (September 15, 2020); *see also* Declaration of Philip W. Schiller in Support of Defendant Apple Inc.'s Opposition to Epic Games, Inc.'s Motion for a Temporary Restraining Order and Order to Show Cause Why a Preliminary Injunction Should Not Issue, Exhibit E, *Epic Games, Inc. vs Apple Inc.*, Case No. 3:20-cv-05640-YGR, ECF No. 37-5, at 5 (August 21, 2020) ("Apple treats all developers according to the same terms . . ."). Relevant markets can consist of sales to targeted customers when those customers are treated differently from other customers. *See*



and not just game developers. As noted above, Professor Hitt has excluded all non-game developers from consideration so that his inquiry is incapable of addressing any relevant market that has been put forward in connection with this motion, including the one that Professor Hitt ultimately posits.

55. Even as to game developers, however, Professor Hitt has focused solely on Epic's Fortnite game.<sup>60</sup> Other than some largely conclusory assertions in the introduction to Section 3 and the first paragraph of Section 3.1, the empirical evidence he provides concerns substitution options for Fortnite.<sup>61</sup> Games other than Fortnite may not be suited for play on gaming consoles or PCs. Casual games designed for quick sessions on-the-go may not be attractive as console or PC games.<sup>62</sup> And some games, like Pokémon Go, are designed to be played when interacting

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Horizontal Merger Guidelines, US Department of Justice and Federal Trade Commission, Section 7, August 19, 2010, at 3, <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>. This is not applicable here because Apple's IAP policies apply generally to all app developers that are subject to them.

<sup>60</sup> For convenience, I refer generally to game "developers" below. My understanding is that in the gaming industry, there can be distinctions between game "developers" that create games and game "publishers" that market and sell the games on different platforms. Some gaming companies perform all of these roles itself. When the "developer" and "publisher" roles are performed by separate companies, it is the publisher that would list the app in the iOS App Store. In those circumstances, the term "developer" as I use it in this declaration and in my opening declaration also includes the publisher.

<sup>61</sup> Paragraph 19 makes the claim that "It is clear that videogame developers do have [alternative distribution and monetization] options" without providing any evidence. Hitt Declaration at ¶ 19. Paragraph 20 makes the claim that "[Dr. Evans] largely ignores developers' ability to distribute and monetize their videogames on multiple platforms commonly used to play videogames, such as Microsoft Windows PCs ('PC'), Microsoft's Xbox One, Sony's PlayStation 4 ('PS4'), the Nintendo Switch, Apple macOS computers ('Mac'), and tablets (both Android-based and Microsoft's Surface series). Developers can also make their games available on game streaming platforms, such as GeForce Now, which consumers can access on various hardware." Hitt Declaration at ¶ 20 (footnote omitted).

Other than these statements, all of the specific empirical evidence in paragraphs 21-44 on market definition that Professor Hitt claims support his claims that game developers have attractive options to substitute to other platforms are specific to Fortnite. The only exceptions are two surveys on the use of multiple platforms to play games (cited in footnotes 39, 51, and 52), which Professor Hitt cites to support his claim that Epic has other options for distributing Fortnite to users. Professor Hitt's analysis is of the options for Epic for distributing Fortnite, not the options for game developers generally, nor the options for all app developers.

<sup>62</sup> Jeff Dunn, "The video game industry now gets more money making games for smartphones and tablets than for consoles or PCs," Business Insider, June 22, 2017, <https://www.businessinsider.com/mobile-games-more-money-than-console-pc-chart-2017-6> ("There's a common feeling among video game enthusiasts that mobile games don't really count. . . . Smartphones have been a big catalyst for the industry's growth in recent years, thanks in big part to their ubiquity. In the developed world, nearly everyone has a smartphone in his or her pocket these days. While the quality of those games typically isn't as high as that on PC or Xbox games, they have expanded gaming's horizons, and made the art form accessible to more people."); Arjun Kharpal, "Sony set to make PlayStation games for iOS, Android," CNBC, March 24, 2016, <https://www.cnbc.com/2016/03/24/sony-set-to-make-playstation-games-for-ios-android.html> ("Smartphone games have done well at attracting so-called 'casual gamers' who may not necessarily be into console gaming."); Tushar Tajane, "The Rise of Mobile Games: Will

with the outside real world and are hence not suitable for use on gaming consoles or PCs.<sup>63</sup> Thus, Professor Hitt's focus on Fortnite provides an incomplete picture of what's available to game publishers generally.

56. I do not agree with Professor Hitt's claims that, even as to Epic, other distribution channels are close substitutes for Apple's iOS App Store to reach iOS users. But if I were to assume, strictly for the sake of argument, that Professor Hitt were correct, his evidence is incapable of establishing that the relevant market for the distribution of apps to iOS users is broader than Apple's iOS App Store for the following reasons.

57. One standard tool in market definition analysis is the hypothetical monopolist test, which is set out, for example, in the *Horizontal Merger Guidelines* issued by the US Department of Justice and the Federal Trade Commission. The hypothetical monopolist test asks whether a hypothetical monopolist of a candidate market can impose a "small but significant and non-transitory increase in price ('SSNIP')".<sup>64</sup> When one conducts the hypothetical monopolist test, it is almost always the case that some marginal consumers will react to the price increase by substituting to products that are outside the candidate market.

58. The relevant question for market definition is whether there is *enough* switching by marginal customers to make a SSNIP by the hypothetical monopolist unprofitable. Identifying and focusing only on a single alleged marginal customer is not meaningful evidence that the relevant market is too narrow. As the *Horizontal Merger Guidelines* state:

Groups of products may satisfy the hypothetical monopolist test without including the full range of substitutes from which customers choose. The hypothetical monopolist test may identify a group of products as a relevant

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Smartphones Replace Consoles?" December 4, 2018, <https://techzoom.org/rise-mobile-games-smartphones-replace-consoles/> ("It isn't like traditional PC and Console gamers have switched over to mobile games, but more like the accessibility of mobile games have attracted a huge number of casual gamers to the industry. Most of the people who play and spend money on mobile games do not usually play on consoles or PCs, while PC and console gamers might play a few mobile games every now and then; it is very rare to find gamers who have switched over completely to the mobile platform.").

<sup>63</sup> Pokémon Go is only available on Android and iOS devices. See Pokémon Go, "Pokémon Go Homepage," <https://www.pokemongo.com/en-us/>.

<sup>64</sup> See, e.g., Horizontal Merger Guidelines, US Department of Justice and Federal Trade Commission, Section 7, August 19, 2010, at 4.1.1, <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.



market even if customers would substitute significantly to products outside that group in response to a price increase.<sup>65</sup>

Any given antitrust market will almost always include some marginal consumers that would switch to products outside the defined market in the face of a price increase imposed by the hypothetical monopolist. That is, even if Professor Hitt had shown that Epic has good alternatives to Apple's iOS App Store to reach iOS users, which he did not, this does not disprove the finding I reached in my opening declaration that Apple is a monopoly supplier of iOS app distribution.

## **B. Professor Hitt's Analysis Contains Other Significant Flaws**

59. In this section, I address other significant flaws in Professor Hitt's analysis of market definition and market power.

### **1. Use of Different Products in Different Circumstances Does Not Demonstrate That They Are Substitutes**

60. Professor Hitt claims that Epic has a number of alternatives for distributing Fortnite to iOS users other than through Apple's iOS App Store. He presents information that some users who play Fortnite on the Fortnite iOS app also play Fortnite on other platforms (although most do not, as he noted).<sup>66</sup>

61. This type of evidence is not meaningful as to whether users would be willing to switch, in response to a SSNIP, from playing Fortnite on iOS to playing Fortnite on other platforms for those use cases where they play on iOS. For example, if someone plays Fortnite while outside the home or does not have access to a reliable non-cellular Internet connection, playing Fortnite on a gaming console or gaming PC are not good alternatives. My understanding is that Epic believes, based on its experience, that non-mobile platforms are not good substitutes for playing Fortnite on mobile devices.

62. To illustrate the flaw in Professor Hitt's methodology, consider the options that consumers have for transportation in the normal state of the world when there's no pandemic.

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<sup>65</sup> Horizontal Merger Guidelines, US Department of Justice and Federal Trade Commission, Section 7, August 19, 2010, at 4.1.1, <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

<sup>66</sup> Hitt Declaration at ¶ 34.

Someone living in San Francisco, for example, could use a range of options, including BART, Muni trains, buses, taxis, ride-sharing services (like Uber or Lyft), driving (if they own a car), biking, and walking. Most consumers likely use many of these options in different circumstances. Sometimes, if time is tight and it's raining, they might take an Uber. At other times, if the weather is nice and they want a little exercise, they might walk or bike. Or, if there is a convenient route, they might take the BART.

63. The fact that many consumers use different alternatives when faced with different circumstances does not mean that, for example, there might not be a relevant antitrust market consisting of taxis and ride-sharing services.<sup>67</sup> Nor does the fact that a consumer who sometimes uses Uber and sometimes bikes mean that she is not harmed if the provision of taxis and ride-sharing services is monopolized. The mere fact that some consumers use different products in different circumstances does not provide reliable information that they are willing to substitute among them in a way that prevents the exercise of market power.<sup>68</sup>

## **2. Professor Hitt Commits the Cellophane Fallacy**

64. In Professor Hitt's analysis of market definition, he presents evidence that he claims shows the existence of alternatives available to Epic for distributing Fortnite to iOS users other than through the iOS App Store.<sup>69</sup> Professor Hitt has committed the classic "Cellophane Fallacy", which was named after a case in which DuPont was found not to have had market power over its Cellophane wrapping product because of the existence of consumers who substituted to alternative wrapping products.<sup>70</sup> The analytical error results from considering the substitution behavior of consumers when the monopolist has already exercised market power.

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<sup>67</sup> This example is illustrative. I have not undertaken an analysis of market definition in the context of transportation services.

<sup>68</sup> I discuss these issues in more detail in Sections II.B and II.C.1 of my opening declaration.

<sup>69</sup> As I discuss in Section III.B.3 below, the fact that some consumers use different platforms in different circumstances does not demonstrate that those alternatives are in the same relevant market.

<sup>70</sup> Landes, William and Richard A. Posner (1981), "Market Power in Antitrust Cases," *Harvard Law Review* 94(5), pp. 937-996; Schaerr, Gene (1985) "The Cellophane Fallacy and the Justice Department's Guidelines for Horizontal Mergers," *Yale Law Journal* 94(3), pp. 670-693; Werden, Gregory (2000), "Market Delineation under the Merger Guidelines: Monopoly Cases and Alternative Approaches," *Review of Industrial Organization* 16(2), pp. 211-218.

65. Basic economic principles tell us that a profit-maximizing monopolist will raise prices to the point that enough consumers would, in fact, switch to alternative products (or stop buying the monopolist's product altogether) to make any further increase in price unprofitable. The monopolist is basically trying to find the point at which the increased profit from charging higher prices to consumers who don't switch outweighs the decreased profits from those who do switch. It is always profitable for the monopolist to continue raising prices until there is switching.

66. Suppose, contrary to Professor Hitt, that Apple is a monopolist over the distribution of apps to iOS users. In that case, economists would expect to observe switching behavior between iOS and other platforms as a result of Apple having exercised its monopoly power. Professor Hitt does not provide any meaningful support for his claims that Apple's iOS App Store practices are competitive, as I discuss in Section III.B.7 below. Given this lack of evidence, Professor Hitt's claims about the existence of substitution options suffers from the Cellophane Fallacy, which tell us that, in this context, if Apple were exercising monopoly power, exercise of such power would be expected to result in switching behavior, but that switching behavior is not relevant to the assessment of the relevant market because it is not switching that results from a SSNIP from competitive levels.

### **3. Professor Hitt's Focus on the Existence of Fortnite Users on Non-iOS Platforms Is Misplaced**

67. Professor Hitt argues that, "Only a minority of Fortnite's users play exclusively on iPhones and iPads, consistent with a broader relevant antitrust market."<sup>71</sup> The fact that Fortnite has many users who play on other platforms rather than on iOS does not provide any reliable evidence that those alternative platforms are good substitutes for iOS users. Simply observing that Fortnite has many users who play on a gaming PC, for example, does not tell us anything about whether Fortnite users who play on iOS have gaming PCs at all or are willing to buy a new gaming PC in order to play Fortnite, or have access to those gaming PCs at the times that they want to play Fortnite on iOS.

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<sup>71</sup> Hitt Declaration at Section 3.2.1 (heading title).

68. The fact that much of Fortnite’s revenues comes from platforms other than iOS does not tell us anything reliable about Epic’s ability to reach iOS users on those other platforms. For example, suppose an app was used on a worldwide basis, with 20 percent of users and revenues coming from Europe. If the app developer was prevented from distributing the app in Europe because of government restrictions, the fact that 80 percent of its sales are in other countries doesn’t mean that distribution in those other countries are alternative channels of reaching European customers. And it doesn’t mean that the developer can sell “more” to non-European customers to make up for its lack of access to European customers—we would expect the developer to already be selling as much as is profitable to non-European customers.

#### **4. Professor Hitt’s Claims About the Lack of Switching from iOS to Android Are Flawed**

69. Professor Hitt claims that “Dr. Evans also exaggerates the difficulty of switching from iOS to Android devices in at least two ways. First, consumers do switch. Second, consumers that do not switch are not necessarily locked in.”<sup>72</sup> He cites statistics that “almost half of consumers replace their smartphones every 2 years.”<sup>73</sup> Professor Hitt, however, ignores the fact that, as I discussed in my opening declaration, iPhone sales in 2019 were only about one fifth of Apple’s total installed base of about 1 billion active iPhones.<sup>74</sup> That leaves about four fifths, or up to 800 million active iPhones, for which users are not buying new smartphones in a given year.

70. Professor Hitt does not address the substance of the eight sources of switching costs I discussed in my opening report.<sup>75</sup> Instead, he argues that “Several of the ‘switching costs’ that Dr. Evans identifies are properly understood as real value that Apple has added to the iOS ecosystem in its efforts to compete, not as switching costs that are locking consumers in.”<sup>76</sup> He argued that “iCloud Photos, iCloud Drive, Apple News, and Apple TV+” are not switching costs because “[t]hese services exist in the first place precisely because Apple continuously

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<sup>72</sup> Hitt Declaration at ¶ 45.

<sup>73</sup> Hitt Declaration at ¶ 45.

<sup>74</sup> Evans Declaration at ¶¶ 41, 44.

<sup>75</sup> For a discussion of those switching costs, *see* Evans Declaration at Section II.B.2.c.

<sup>76</sup> Hitt Declaration at ¶ 45.

innovates and rolls out new features and service to make its platform more attractive than the platforms of its competitors.”<sup>77</sup>

71. Professor Hitt has misinterpreted the evidence on switching costs I documented. The point I made was not that iCloud Photos, for example, is a switching cost because users love iCloud Photos so much that they would not want to use a different cloud photo service on Android. Rather, iCloud Photos constitutes a switching cost because an iPhone user who switched to Android would need to figure out how to transfer her entire photo library over to an Android cloud photo service and would lose the synchronization of her photos with any other Apple devices she owned and anyone sharing her iCloud Photos. I also note that the specific examples he raised apply only to portions of four of the eight sources of switching costs I identified. He did not provide a specific response to the other four sources of switching costs I identified.<sup>78</sup>

## **5. Professor Hitt’s Share Estimates Are Wrong**

72. Professor Hitt claims that the relevant antitrust market includes at least personal computers, handheld gaming devices, gaming consoles, handheld devices (iOS and Android smartphones and tablets and Microsoft Surface tablets), and streaming game platforms, and may include other web gaming platforms.<sup>79</sup> He then reports “market shares” that are based not on transactions in this proposed market, but on transactions involving Fortnite only. As an economic matter, these single customer shares are not relevant to measuring any aspect of a relevant antitrust market because they do not in fact pertain to that market.

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<sup>77</sup> Hitt Declaration at ¶ 45.

<sup>78</sup> As I have explained, Professor Hitt has incorrectly interpreted the switching cost evidence documented in my opening declaration. But, even if I assumed Professor Hitt were correct that some of the switching costs reflect “real value” provided by Apple, this value would mean that those features provide Apple with market power because iOS users are less willing to substitute to Android devices and give up those features. A monopolist that, hypothetically, has a legitimately earned monopoly by selling a much better product than any rival is still a monopolist. Its customers will be resistant to substituting to a competitor’s products. Lack of good substitutes is often an explanation for why a firm has substantial market power.

<sup>79</sup> Hitt Declaration at ¶ 49.

**6. The Fact that Some Consumers Used IAP When Offered Epic “Direct Pay” Has No Relevance**

73. Professor Hitt claims that the experience from iOS Fortnite users having a choice of Epic “Direct Pay” in addition to Apple’s IAP payment processing showed that “nearly half of all consumers valued Apple’s platform services enough to overcome a 20 percent price differential.”<sup>80</sup> The percentage of users who chose the Epic Direct Pay option increased over time—from the start of the Direct Pay option being offered (August 13) to the point when the Apple IAP option was no longer available because Epic’s developer account ending in ’84 was terminated by Apple (midday August 28), about 73 percent of purchases were on Epic Direct Pay.<sup>81</sup>

74. The fact that material numbers of consumers chose Direct Pay is strong evidence that payment processing methods, including IAP, are separate products. The fact that some consumers also chose IAP instead of Direct Pay is not relevant to the separate products inquiry. We would generally expect that after removing a tie, some consumers would continue to purchase the tied product from the seller of the tying product.

**7. Professor Hitt’s Claim that Apple’s Commission Is Not Supracompetitive Is Not Reliable**

75. Professor Hitt claims that “Apple’s commission is not supracompetitive.”<sup>82</sup> The overarching problem with this assertion is that Professor Hitt makes no attempt to consider a counterfactual world in which the Apple restraints at issue were not in place. Without doing so, he cannot reliably reach a conclusion that Apple’s restraints have not harmed competition.

76. He makes three main points in support of this claim. First, he states that Apple has never raised its 30 percent base fee since it was introduced in 2008 and that it has reduced it for subscriptions after the first year.<sup>83</sup> He does not consider the profit that Apple makes on in-app purchases or analyze whether those profits have increased over time. This information is not available publicly and would have to come directly from Apple. The fact that Apple has never

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<sup>80</sup> Hitt Declaration at ¶ 70.

<sup>81</sup> Calculations based on data from Epic.

<sup>82</sup> Hitt Declaration at Section 4.3 (heading title).

<sup>83</sup> Hitt Declaration at ¶ 57.

raised its commission is uninformative of whether Apple's price is supracompetitive, and stating this fact is not a substitute for a serious analysis of the issue.

77. Professor Hitt's second point is that "Apple's commission structure and its base 30 percent rate is not unique. Many other app stores have a similar payment structure and the same base level of commissions."<sup>84</sup> The commission rate charged by other app stores, in other markets, does not tell us how much developers would pay in the absence of the conduct at issue in this matter. Information on the profitability of the App Store, and the contribution from commissions on in-app payments, would be useful for assessing this. Moreover, as I discussed in Section II.D, commissions are not charged at all for many types of in-app purchases. And in the case of some app stores, no commissions are charged for any in-app purchases.

78. Professor Hitt's last point is that the quality of services provided to developers has increased over time.<sup>85</sup> Apple's commission, however, is expressed as a percentage of the developer's revenue. To the extent that iOS developers can earn more revenue as a result of an increase in quality, Apple's fee increases. So, Apple earns more in fee revenue if it provides an increase in quality that allows developers to sell more to users. Moreover, as noted above, Professor Hitt does not consider whether Apple's profits from its App Store, as opposed to its commission rate, have increased.

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<sup>84</sup> Hitt Declaration at ¶ 58.

<sup>85</sup> Hitt Declaration at ¶ 59.

Pursuant to 28 U.S.C. § 1746, I, David S. Evans, declare under penalty of perjury that the foregoing is true and correct and that I executed this declaration on September 18, 2020 PT in Marblehead, Massachusetts.

A handwritten signature in dark ink, appearing to read "DSE", is positioned above a horizontal line.